

# Satisfaction of antenatal mothers with the care provided by nurse-midwives in an urban secondary care unit

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## ABSTRACT

**Background:** The satisfaction of antenatal women to antenatal services has rarely been studied in India. In a nation with a maternal mortality ratio of 178/100,000 live births, it is crucial to explore all avenues to reduce it. **Aims:** Our study aims to assess the pregnant women's satisfaction with regard to antenatal care services provided by nurse-midwives in an urban health center in South India. **Methods:** We administered a satisfaction of care questionnaire to 200 consecutive antenatal women attending the nurse run antenatal clinics from April 2014 to November 2014. The data entry was done using Epi-Data system and the analysis by SPSS version 16. **Statistical Analysis Used:** The absolute distribution of each of the question in the satisfaction of care questionnaire was calculated as proportions. The relationship between satisfaction of care and parity, number of visits, years of experience of the care provider and mother's education was tested using Mann-Whitney test for two independent groups. **Results:** The mean age of the mothers was 23.5 years. More than 95% of the mothers expressed satisfaction with the number of antenatal visits components of antenatal care. Only 31.8% of the mothers were satisfied with the health education on family planning. There was no significant relationship between satisfaction of care and parity of mothers or years of experience of care provider. **Conclusions:** Pregnant women attending a nurse run antenatal care service have positively expressed satisfaction of care provided therein.

**Keywords:** Antenatal care, mothers' satisfaction, nurse-run services

## Introduction

The evaluation of satisfaction of customer, client, or patient to a health service provided is essential in improving the quality of the health service. Mothers' satisfaction of antenatal services provided has rarely been studied in India. In a country which has a maternal mortality ratio (MMR) of 178/100,000 live births in 2010–2013, it is crucial to look into all aspects of why the Millennium Development Goal 5 of decreasing the MMR to 109/100,000 by 2015 has not been achieved.<sup>[1]</sup> Utilization of

antenatal services depends on many factors, and one of it is the satisfaction of care provided. The evaluation of satisfaction of care will promote steps in improving the services provided.

According to the Institute of Medicine a high-quality medical care system has to be safe for patients, effective, efficient, patient-centered, timely, and equitable.<sup>[2]</sup> Thus, any high-quality antenatal care system needs to aim for these qualities. When a service is patient-centered, it provides care that is respectful and responsive to patient's individual needs and values. An antenatal care service needs to be of good quality and satisfying for the pregnant women. Such a service will have optimal utilization and compliance.

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We had introduced nurse run antenatal services in our urban secondary health center in response to the community needs in 2005. There is a general perception that only doctors can provide antenatal care that is satisfying to the pregnant women. The measurement of patient satisfaction is one of the established methods to demonstrate the success of the services being provided by a health-care facility. We, therefore, planned a prospective cohort study to assess the mothers' satisfaction of the antenatal care services provided by nurse-midwives.

## Objective

Our objective was to assess the pregnant women's satisfaction with regard to the care provided by the nurse-midwives of the urban health center with regard to low-risk antenatal mothers at term.

## Methods

The satisfaction of care provided by nurse-midwives was assessed using a cross-sectional design. It was a onetime measurement done at term. It was conducted at an urban health center which is a secondary care unit attached to a teaching tertiary hospital in South India. It serves a population of nearly 2 lakhs and is situated about 2 km from the tertiary center. The center is managed by family and community medicine physicians and nurses. The antenatal and intranatal care of low-risk mothers is provided by nurse-midwives.

Based on published literature from South India,<sup>[3]</sup> we proposed to estimate that 80% (i.e.  $P$ ) of mothers receive overall appropriate clinical quality of care. We assumed an absolute precision ( $d$ ) of 6% and anticipated 10% to lost to follow-up due to referral or drop outs. Hence, we worked out a sample size of 200 study participants based on the formula:  $(Z^2_{[1-\alpha/2]} * P [1 - P]) / d^2$ .<sup>[4]</sup>

Due to logistical and practical considerations, we decided to recruit all the eligible low-risk mothers attending the antenatal clinic during the study.

A total of 200 consecutive low-risk antenatal mothers were administered the satisfaction questionnaire at term. This was done in privacy after obtaining informed consent, by staff who was not part of the caregiving team. The satisfaction questionnaire was a three-point Likert scale questionnaire which had four domains. The four domains were satisfaction with regard to the antenatal visits, antenatal care, health education, and summing up. The satisfaction regarding antenatal visits, antenatal care, and health education had four questions each. The summing up section had three questions. Each question had three responses namely satisfied, somewhat satisfied, and dissatisfied. This questionnaire was adapted from the World Health Organization's antenatal care assessment of perceived quality of care women's questionnaire.<sup>[5]</sup> This questionnaire was translated and back translated for validation. The data entry was done using the Epi-Data software version 3.1 of Epidata Association, Odense, Denmark and analysis using SPSS for Windows, version 16.1, SPSS Inc., Chicago.

The satisfaction questionnaire had 15 questions in four sections. All these sections had minimum potential score of 4 and maximum of 12 except the section four on summing up, which had a minimum of 3 and maximum of 9. The section on satisfaction regarding health education was added later in the data collection and hence, was administered only to 157 mothers. The overall minimum score was 15 and the maximum was 45. The absolute distribution of each of the question in this questionnaire was calculated as proportions. The total median score, maximum score, minimum score, 25% quartile and 75% quartile were calculated for overall and for the four sections. We tested the relationship between satisfaction of care and parity, number of visits, years of experience of the care provider and mother's education using Mann-Whitney test for two independent groups. The Institutional Review Board of the institution approved the conduct of the study.

## Results

In total 200 antenatal mothers were administered the satisfaction questionnaire at around 37 weeks of gestation with a mean of 6 antenatal visits. The care was provided by 9 nurse midwives who were qualified in general nurse and midwifery with a median experience of 8 years.

The sociodemographic distribution of the study participants is given in Table 1. The mean age of the mothers was 23.52 years with a standard deviation (SD) of 3.37. The minimum age was 18, and the maximum was 35 years. The mean (SD) education was 9.86 (3.11) years. There were two mothers with no education, and the highest education was MSc Med. Even though 13.55% of the mothers had college education, only 6 (3.0%) mothers were employed in an occupation outside their homes. The remaining were homemakers. All the mothers were married. The mean waiting time was 4 h with an SD of 1 h and 42 min.

**Table 1: Sociodemographic distribution of the participants**

Characteristics (n=200)	n (%)
Age in years	
18-22	76 (38.0)
23-27	103 (51.5)
28-32	16 (8.0)
>32	5 (2.5)
Religion	
Hindus	122 (61.0)
Muslims	66 (33.0)
Christians	12 (6.0)
Education	
0-5	17 (8.5)
6-10	119 (59.5)
11-12	37 (18.5)
College	27 (13.5)
Parity	
Primiparous	101 (50.5)
Multiparous	99 (49.5)

More than 95% of the mothers were satisfied with the number of visits and the time spent during the consultation as shown in Table 2. A small proportion of mothers expected more frequent visits. Although the waiting time was long, only a third of the mothers expressed dissatisfaction about the waiting time.

Most of the mothers 98% were satisfied with regard to the with regard to inquiry about concerns, the explanation given and the examination done by the nurse-midwives. There was poor satisfaction only with regard to the health education concerning family planning.

Majority of the mothers expressed their satisfaction regarding the overall care. Twenty-eight mothers said that they will not come back to this center for antenatal care if they become pregnant again. The main reasons being adopting permanent methods of contraception, going to their husband's house for the next delivery while two mothers did not give any reason and one mother was unhappy with the care. Most of them said they will recommend this care for their relatives and friends.

The maximum overall score was 45, and the minimum was 33 as shown in Table 3. In the antenatal care and sum up domains, the median scores and the quartile scores were the same. Whereas in the antenatal visit domain the median score is same as that of the Q3 score and in the health education domain the median score and the Q1 scores were the same. The mean scores of the different domains and the overall scores are similar to the median score.

There is a significant difference in the satisfaction of care with regard to health education between primiparous and multiparous mothers as seen in Table 4. The multiparous mothers were more satisfied than the primiparous mothers with regard to health education. The multiparous mothers were more informed about family planning as commonly permanent methods of contraception are discussed as compared to the spacing methods. Overall only 31.8% of the mothers were satisfied with the health education regarding family planning. There was a difference in the sum up score between the primiparous and multiparous mothers. The main reason being most of the primiparous mothers were planning to come back for their next delivery, and the multiparous mothers were either planning to have sterilization or not to become pregnant again.

There was no significant difference in the domains of satisfaction of antenatal care with the number of visits, the experience of the nurse-midwives or with the mother's education.

## Discussion

Our study demonstrated that more than 90% of the pregnant women attending the nurse run antenatal services were generally satisfied with the care provided. Studies done in Ethiopia for focused antenatal care services have documented 60.4%.<sup>[6]</sup> A doctor run antenatal service in Malaysia has reported that 56.1% of mothers reported satisfaction with the service provided.<sup>[7]</sup> A study in rural Bengal documented more than 60% of clients expressed satisfaction with care provided by doctors.<sup>[8]</sup>

**Table 2: Distribution of responses of satisfaction of antenatal care by nurse-midwives**

Satisfaction with regard to	Number reporting satisfaction (%)
Antenatal visits (n=200)	
Number of visits	192 (96.0)
Time between visits	174 (87.0)
Waiting time during the visits	142 (71.0)
Time spent during consultation	197 (98.5)
Antenatal care (n=200)	
Enquiry about concerns	196 (98.0)
Explanation about concerns	195 (97.5)
Examination	196 (98.0)
Tests done	192 (96.0)
Health education (n=157)	
Diet	153 (97.5)
Antenatal exercises	150 (95.5)
Family planning	50 (31.8)
Preparedness for delivery	136 (86.6)
Sum up (n=200)	
General satisfaction	193 (96.5)
Visit this hospital if pregnant again	172 (86.0)
Recommend for relatives and friends	194 (97.0)

**Table 3: Descriptive statistics for the overall and domain-specific scores for satisfaction of care as reported by mothers**

Domains	Mean (SD)	Median (q1, q3)	Range
Antenatal visits (n=200)	11.33 (1.16)	12 (11,12)	6-12
Antenatal care (n=200)	11.85 (0.64)	12 (12,12)	6-12
Health education (n=157)	10.44 (1.3)	10 (10,12)	5-12
Sum up (n=200)	8.74 (0.64)	9 (9,9)	6-9
Overall score (n=157)	42.14 (2.51)	43 (41,44)	33-45

SD: Standard deviation

**Table 4: Comparison of domain-specific and overall mean rank scores of satisfaction of antenatal care by parity**

Domains	Mean rank score		Mann-Whitney score	P
	Primipara number	Multipara number		
Antenatal visit (n=200)	99	101	4951.5	1.00
	100.0	101.0		
Antenatal care (n=200)	99	101	4785.5	0.22
	98.3	102.6		
Health education (n=157)	78	79	2137.0	0.001*
	66.9	91.0		
Sum up (n=200)	99	101	4248.0	0.05
	108.1	93.1		
Overall score (n=157)	78	79	2578.5	0.07
	72.6	85.4		

There is need to improve in the health education component, especially with regard to family planning as the antenatal check period is an ideal opportunity to discuss family planning

methods. However, the satisfaction on educating about diet, preparedness for delivery, and antenatal exercises were more than 80%.

An important determinant of mothers' satisfaction of antenatal services in the developing countries is interpersonal behavior. Mothers' were satisfied if they were greeted and spoken to politely.<sup>[9]</sup> Other important determinants were waiting time, privacy during examination, perception of provider competency and preference for female providers.<sup>[9]</sup> Mothers' who are satisfied with the services are more likely to comply with treatment, take responsibility for their care, and attend the services regularly. We reinforce the importance of evaluating mothers' satisfaction of antenatal care services as it would lead to improvement in utilization of antenatal and delivery services thus contributing to the improvement of maternal health.

## Conclusion

We conclude that pregnant women expressed positive satisfaction of antenatal care provided by nurse midwives. Nurse midwives can provide patient centered care which promotes compliance and thus quality of antenatal care

## Limitations

Our study used a questionnaire which may have limited us in the perception of satisfaction. A better perception of maternal satisfaction could have been derived from parallel qualitative methods such as focus group discussion and interviewing.

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## Conflicts of interest

There are no conflicts of interest.

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